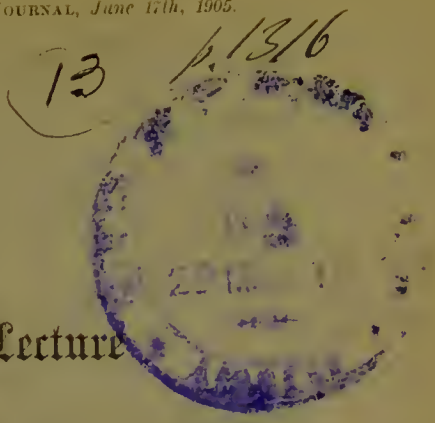
Reprinted from the BRITISH MEDICAL JOURNAL, *June 17th, 1905.*



A Clinical Lecture

ON

DILATATION OF THE GALL BLADDER SIMULATING OVARIAN CYST.

Delivered at the Samaritan Free Hospital for Women.

BY ALBAN DORAN, F.R.C.S.,
Surgeon, Samaritan Free Hospital.

THE relation of cholelithiasis to pregnancy and gestation is a subject of high interest which has been much investigated of late by Potocky and other French obstetricians. I have discussed it elsewhere in respect to two cases under my own treatment—the first an example of old calculous obstruction of the common duct,[1] the second an instance of a large bile cyst in the liver apparently traceable to a blow during gestation several years before it was opened and drained.[2] The gall bladder and the three ducts were unobstructed. In a third case, on which this lecture is based, a cystic abdominal tumour developed in a multiparous woman, and proved to be a gall bladder with a calculus incarcerated in the cystic duct.

The relative frequency of cholelithiasis in women and its relation to gestation cannot be discussed in these notes. I shall confine myself to the consideration of cystic gall bladder as a form of abdominal tumour in female subjects, reviewing my own experience and that of others. For dilated gall bladder, a common result of cholelithiasis, sometimes assumes characters which may cause it to be mistaken, at least on superficial inspection, for an ovarian cyst. Hence it will be instructive for us to review all reliable reports of large cystic gall bladder in women. I need not dwell on dilatation of the gall bladder in its lesser degrees, where the question of cholelithiasis and its surgical treatment is all-important, the distension of the gall bladder being a secondary matter offering no difficulties in diagnosis. This subject is amply treated in the systematic textbooks written by Osler, Waring, Rolleston, and others, and in the well-known surgical works of such authorities as Langenbuch[3] and Mayo Robson.*

* Dropsical gall bladder is not invariably due to cholelithiasis. Charron has described a case of dropsy of the gall bladder which developed after typhoid fever as a sequence of simple inflammatory disease of the cystic duct, independent of the conditions which engender cholelithiasis.

First of all I shall dwell on the history and treatment of my own case in full.

Mrs. B., aged 50, was admitted into my wards in the Samaritan Free Hospital on March 4th, 1905. She had borne eleven children, all delivered at term spontaneously and all living; the puerperium was on every occasion free from any grave complication. The youngest child was over 5 years old. Twelve years before admission she consulted Dr. W. Millar, of South Tottenham, for a small swelling in the right side of the abdomen. After that date she passed through her last five pregnancies. The tumour in the meantime grew very slowly, but became painful

On examination, the patient seemed to me lean rather than cachectic. The conjunctivae were pearly white, and the urine contained no morbid products; the pulse 108, the temperature hardly above normal. The menopause had been complete for two years. On inspecting the abdomen, which was almost concave, a very prominent body could be seen pushing forward the parietes on the right side, between the hypochondrium and the groin. It was tender to the touch and elastic; fluctuation could not be clearly distinguished; its surface did not feel quite smooth. There was distinct resonance between its upper limits and the lower border of the liver, and also over the left half of the tumour. Not only was the tumour fairly movable laterally and from before backwards, but its lower pole could be displaced downwards till it reached Douglas's pouch. The uterus was small and freely movable, the fornices free.

When there is a doubt about an abdominal tumour in a woman, even when it lies entirely on one side of the middle line, that new growth very often proves to be ovarian.* Two of the physical signs above noted were deceptive, still I bore dilated gall bladder in mind.

I operated on March 7th, 1905, Mr Butler-Smythe assisting and Mr. Morley administering chloroform and ether. I made a vertical incision through the fibres of the right rectus muscle close to its outer border. Then a body shaped like a big cucumber was drawn out of the wound. Its lower pole was rounded and free whilst over its uppermost part ran a tongue of liver tissue, Riedl's lobe, for nearly 3 in. to the left somewhat downwards.

I laid open the lower pole of the tumour by a vertical incision. About one pint and three-quarters or a litre of a turbid pale fluid came away, specific gravity 1008, neutral, albuminous, and free from bile. I then extracted 13 big facetted calculi and 217 smaller gall stones varying in size from the bulk of a millet seed to that of a pea, all bearing facets. On raising the walls of the cyst, which was clearly the gall bladder and was free from any kind of adhesion, I found that the cystic duct was obstructed by a big stone, which I extracted through a longitudinal incision made in the walls of the duct. The incision was closed with a continuous No. 0 catgut suture, then I united the edges of the incision in the gall bladder with the same material.† The cystic gall bladder retracted considerably; I did not attempt to fix it to the parietal wound, which was closed without drainage. The operation caused but little constitutional disturbance, and the patient was discharged on April 4th, a month later. At that date there was resonance upon the ribs and the fundus of the gall bladder had retreated under the edge of the liver so that it could not be defined on palpation.

Having related my own experience, I will now turn to the records of other observers. For clinical reasons the cases

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* I find that Kocher[7] expressed the same opinion in respect to his own case of tumour in the right side of the abdomen: "The conspicuous bulk of the growth at once turns the thoughts of the observer to the commonest form of abominal tumour, ovarian cyst."

† For the latest views on the operative treatment of the cystic gall bladder see William and Charles Mayo: "A Review of 1,000 Operations for Gall-stone Disease," *Amer. Journ. Med. Sciences*, vol. cxxix, March, 1905, p. 375.

which they report may conveniently be divided into three groups:

I. Cystic tumours of great size, extending to the left of the middle line (Terrier, Lawson Tait, Gersuny).

II. Cystic tumours filling the greater part of the right side of the abdomen, liable to be taken for ovarian cysts, fixed to that side by parietal adhesions (Kocher, Tuffier, Author).

III. Relatively small dropsical gall bladders associated with a second tumour of more doubtful character (Reymond, Tischendorff, Chance).

Class I.—This class includes all cases of cystic gall bladder forming a large tumour which encroaches considerably on the abdominal cavity to the left of the middle line.

Terrier's case[4] is perfectly clear. A woman, aged 50, suffered from a very large fluctuating tumour, which was tapped in order to relieve dyspnoea; 24 litres (over 42 pints) of gamboge-coloured fluid came away. The cyst, which proved to be the gall bladder itself, was strongly adherent to adjacent structures, and a calculus was found incarcerated in the cystic duct. The greater part of the cyst was resected, the edges of the remaining portion being sutured to the integuments. The cavity was then drained, with satisfactory results.

Lawson Tait's case[5] is in one respect the most instructive in the whole series, for it misled that experienced authority himself. The patient, aged 40, was sent to him by her doctor, "with a large abdominal tumour which preserved all the appearances and physical signs of a parovarian cyst, and *as such I had no hesitation in regarding it.*" Tait operated. "On emptying the tumour, I found to my amazement that it was a gall bladder enormously distended." It contained 11 pints of a clear gluey fluid, two or three free calculi, and another "as large as a filbert nut impacted in the neck of the gall bladder. This I removed with a great deal of difficulty. . . . I stitched the opening of the gall bladder to the opening in the abdominal wall, which of course had been made in the original (*sic*) position in the middle line close above the pubes." The wound was drained, and the patient was in good health two years after the operation.

Eleven years ago Gersuny of Vienna contributed to the *Wiener med. Wochenschrift* (1894, pp. 2046, 2048) an article entitled Die Indicationen zur chirurgischen Behandlung der Cholelithiasis. Among the cases was one where the fluid in a cystic gall bladder was sufficient in amount to press seriously on the right lung, so that, as in Terrier's patient, there was dyspnoea. The sex and age are not given in this report,* but Dr. Gersuny has kindly informed me that the patient was a woman aged 50. She had a fit of colic, probably due to gall stone, and a cystic tumour developed within a few weeks. It extended to the left of the middle line and almost down to the right groin. After careful examination it was found to be connected, not with the ovary, but with the liver. According to the report recently forwarded to me by Dr. Gersuny, an incision was made in the lumbar region, because rupture of the gall bladder had been diagnosed, and there was bulging in the right loin. An enormous quantity of bile, with some small gall stones, came out. "I excised a small

* Dr. Gersuny says that the same is the case with other reports of this case, in the *Deutsche med. Zeitung* and other journals, sometimes quoted.

piece of the sac that was united to the abdominal wall; the peritoneum seemed not to be open." The excised portion proved, on microscopical examination, to be part of the wall of the gall bladder. A calculus remained encysted in the cystic duct or neck of the gall bladder, and a fistula developed; but the patient, who remained in good general health ten years after the operation, declined to submit to any further surgical treatment.

Although these cases of extreme cystic dilatation of the gall bladder seem almost confined to female patients, the very largest (Erdmann[6]), if we may feel sure of the diagnosis, occurred in a man aged 24. Sixty to eighty pounds of bile-stained fluid were removed by tapping; the fluid collected again slowly, but the patient left hospital and never returned. As no exploratory operation was undertaken, the relations of the cyst remain unknown. It was most probably a cystic gall bladder, but it might have developed inside the liver as a bile cyst, the gall bladder and ducts remaining normal. I have already reported a similar case in my own operative practice,[2] with notes on others already published. A cyst of this kind is figured without any history, in Hektoen and Riesman's *Textbook of Pathology*, p. 817.

Class II.—Cystic gall bladders forming distinct tumours of considerable size, but confined to the right side of the abdomen, are of much interest in respect to diagnosis. A tumour of this class may simulate very closely a cystic right kidney or an ovarian cyst displaced and adherent to the structures in the right lumbar region, a condition not rare in multiparae. Kocher's case[7] is the most typical of this class. A woman aged thirty was sent into hospital subject to a tumour which had been diagnosed as an ovarian cyst. On careful inquiry it transpired that during the fifteen months which had passed since the swelling was first observed the patient had sudden attacks of pain, accompanied on one occasion by transitory jaundice. Kocher detected a tense oval tumour "of the size of a man's head" in the right side of the abdomen. It was freely movable, its lower pole could be pushed down below the level of the pubes, but the uterus and appendages were not connected with it. It proved to be a large empyema of the gall bladder, with a wall about a centimetre, or nearly two-fifths of an inch, in thickness. A great quantity of pus and about forty-five gall stones were removed. A drainage tube was inserted and the track ultimately closed; no bile ever issued from it.

About ten years ago Tuffier[3] had under his care a nun, aged 40, with a tumour of the size of a fetal head, situated between the false ribs and the umbilicus. It was round and smooth and followed respiratory movements. It could not be pushed back into the lumbar region. The history and the fact that dullness on percussion could be traced from the tumour to the hepatic region soon dispelled the suspicion that the tumour might be ovarian. The patient had been subject for seven years to epigastric pains coming on after meals. As in my own case, there was no history of sickness nor of jaundice. Movable kidney had been diagnosed and a belt applied; it of course gave no relief. The patient was kept at rest for several months. The swelling became enormous, and in this later stage might well have been taken for an ovarian cyst—indeed, it almost came under Class I. The result of opera-

although the extensive membrane formation was suggestive of that disease. All doubt was, however, set at rest after the bacteriological report. I should imagine that such a very large formation of false membrane as occurred in this case must be exceptional. As before stated, it seemed to cover the whole pharyngeal vault and concealed both choanæ and Eustachian tubes. Indeed, it looked more like an extensive sloughy ulceration than anything else.

My object in publishing this short note is to make practitioners aware of the occasional occurrence of naso-pharyngeal tonsillitis without any marked participation of either the anterior nares or the pharynx proper. A knowledge of this fact may in certain cases throw light upon the cause of febrile attacks, the etiology of which would without examination of the naso-pharynx remain undiscovered.

Edinburgh.

DISTENSION OF THE GALL-BLADDER SIMULATING OVARIAN CYST.

By JOHN A. C. KYNOCH, M.B. Edin., F.R.C.P. Edin., F.R.C.S. Edin.,

PROFESSOR OF GYNÆCOLOGY AND OBSTETRICS AT THE UNIVERSITY OF ST. ANDREWS.

ALTHOUGH ovarian cysts have been mistaken for almost all forms of abdominal tumour, perhaps the most seldom giving rise to doubt in diagnosis are those originating in the splenic or hepatic regions. This is doubtless due to their point of origin and lower border being usually readily made out. Both conditions have, however, been recently reported upon. In the *Journal of Obstetrics and Gynæcology* for February Dr. F. E. Taylor reports two cases where enlarged wandering spleens simulated ovarian tumours and he refers to other recorded cases of a similar nature. In the June number of the same journal Dr. T. G. Wilson reports a case of hydatid cyst of the spleen resembling an ovarian cyst. Recently Mr. Alban Doran has discussed the condition of dilatation of the gall-bladder simulating ovarian cysts. He reports the case of a woman, aged 50 years, who had a tender, elastic tumour on the right side between the hypochondrium and the groin. There was a distinct area of resonance between its upper border and the liver. It was fairly moveable in all directions and could be displaced downwards so as to reach Douglas's pouch. Operation proved it to be a distended gall-bladder of about the size of a cucumber. It contained many gall-stones and the cystic duct was obstructed by a large stone. The case was successfully treated by "ideal" cholecystotomy. Mr. Doran discusses similar cases hitherto reported, of which the most interesting are those of Lawson Tait, Kocher, and Osler. In [illegible] case the abdominal tumour, due to a distended gall-[illegible]ler, presented all the physical signs of a parovarian cyst [illegible]which it was mistaken. In Kocher's case, which was [illegible]into hospital as an ovarian cyst, the tumour was of the [illegible]of a man's head and was fairly moveable, so that its [illegible]r pole could be pushed down below the level of the [illegible]s. In the case reported by Osler the distended gall-[illegible]ler was found fixed to the right broad ligament. In [illegible]ion to the cases referred to by Doran, Schulerin[1] reports [illegible]e of distended gall-bladder of the size of an eigbt and a [illegible]months' pregnant uterus removed from a woman, aged [illegible]ears, on account of peritonitic symptoms. The tumour [illegible]hed into the pelvis, the uterus lying behind it. Lastly, [illegible]e of the same nature has been reported by Mr. J. Basil [illegible][2] where the symptoms pointed to those caused by [illegible]on of the pedicle of an ovarian cyst.

[illegible]e following case which has recently come under my [illegible]rvation, although previously to operation it presented [illegible]s pointing to a moveable cystic kidney yet to a certain [illegible]nt simulated an ovarian cyst, and for that reason I [illegible]rt it as an addition to already recorded cases of enlarged [illegible]c gall-bladder forming an abdomino-pelvic tumonr in [illegible]en.

[illegible]. A. Dickson, house snrgeon at the Dundee Royal In[illegible]ary, reports the case as follows. The patient, aged [illegible]years, had been married for 13 years and had bad [illegible]hildren and one miscarriage. Menstruation had been

[1] Centralblatt für Gynäkologie, 1901.
[2] Brit. Med. Jour., June 24th, 1905.

piece of the sac that was united to the abdominal wall; the peritoneum seemed not to be open." The excised portion proved, on microscopical examination, to be part of the wall of the gall bladder. A calculus remained encysted in the cystic duct or neck of the gall bladder, and a fistula developed; but the patient, who remained in good general health ten years after the operation, declined to submit to any further surgical treatment.

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tion was remarkable, the walls of the tumour were found to be extremely thin, so as to appear quite transparent. Hydatid cyst was suspected, and a litre of fluid as clear as crystal came away. Then 22 large calculi were extracted, and one more was found incarcerated in the upper part of the gall bladder, which was drained, the drainage track closed, permanently it is implied, on the fifteenth day. Tuffier quotes four other cases where the fluid in gall bladders obstructed by calculi was watery, as in this instance; the explanation is not mysterious, complete obstruction of the cystic duct prevented any bile from entering the gall bladder, and the mucoid secretion became watery.

Lastly my own case, already described, must be included in this class.

Class III.—Three cases where there appeared to be two tumours or a double tumour in the right loin deserve notice here, as two at least occurred in women. Diagnosis was obscure, and cystic gall bladder with a complication was detected at an exploratory operation. The first patient (Reymond's [9]) was a woman, aged 38, who, when 36, had undergone an operation for tubal abortion. A tumour developed in the right loin, another could be detected at the site of the gall bladder; the two moved together. A lumbar incision was made. A big, deeply-congested movable kidney was exposed. It adhered to a dilated gall bladder, which compressed the structures entering its hilum. The kidney was detached and fixed, then it soon diminished in size. Cholecystotomy was performed a week later; 60 grams of pus and four calculi were found in the gall bladder; the ducts were free. The drainage track was closed by operation. Tischendorff,* according to Reymond, likewise detected a movable kidney adherent to a calculous gall bladder. His patient also underwent two operations—nephropexy and cholecystotomy.

Chance (Manchester)[10] treated a sterile married woman, aged 30, for menorrhagia and pelvic pains. She had observed a swelling in the right side of the abdomen for about a couple of years. It was soon found to be not ovarian, as it was clearly continuous above with the liver. Ten months later Chance detected a large movable mass, behind the tumour, in the region of the right kidney. High temperature and hectic set in, so that tuberculous disease of the kidney was suspected, and on three occasions great quantities of urine were passed suddenly. Yet the urine was free from any morbid condition. Thorburn operated; the tumour in the loin proved to be a portion of the right lobe of the liver enlarged and displaced. The gall bladder contained 200 small gall stones, and a large calculus was impacted in the cystic duct. It was not completely removed. The hectic symptoms, never accounted for, disappeared, and the enlarged lobe of the liver steadily diminished in size. Dr. Chance has kindly informed me that in March, 1905, nearly three years after the operation, the patient was in very good health. The urine was normal and none of the morbid symptoms had recurred.

The sudden escape of a great bulk of retained yet healthy urine probably implied that the enlarged lobe of the liver

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* Reymond gives the reference "Tischendorff *in* Calot, *Thèse de Paris*, 1850, p. 202." I cannot obtain this Thesis, and am not sure of the sex of the patient.

pressed on the pelvis of the kidney, that pressure being occasionally relieved. When the gall bladder was emptied and the enlarged lobe diminished in size the relief became permanent. The case somewhat resembles Reymond's and Tischendorff's, where the dilated gall bladder pressed directly on the kidney.

Summary.—No general conclusions can be drawn from so small a series, but a few facts in association with the six cases in Classes I and II seem worth consideration. We find in regard to *age* that, with one exception, the patients were not young (Terrier, Gersuny, Author, 50; Lawson Tait, Tuffier, 40). On the other hand, Kocher's patient was but 30 years old, and it is well to bear in mind that the largest cyst of this kind on record, if the diagnosis were correct, developed in a man only 24 years of age. As to *fertility*, my own patient was a multipara phenomenally lucky in her eleven pregnancies and labours, whilst Terrier's patient had borne five children. Tuffier's, however, was a nun, and evidence in the remaining cases is defective. Thus the alleged relation between cholelithiasis and pregnancy receives no definite support from the clinical history of these cases.

We need not be surprised at the absence of *jaundice* in all these cases, for the distension of the gall bladder is due to obstruction of the cystic, not the common duct. In Kocher's case alone was there a history of a transitory attack,* but he did not detect a trace of jaundice when he examined the patient. Thus the possibility that an abdominal cyst is a distended gall bladder cannot be excluded on the ground that the patient is free from jaundice.

The *rate of development* of these cystic gall bladders is, as a rule, exceedingly slow. In my own case the tumour had been twelve years under the direct observation of the patient's doctor. A swelling had been noticed in Terrier's case for eight years, and in Tuffier's for five or six years. Kocher's patient had known of the presence of a tumour for one year and three months. According to the manuscript notes which Dr. Gersuny recently forwarded to me the gall-bladder cyst in his case developed rapidly; in the original report it is stated that the patient's doctor was not to be found when she was admitted into hospital, so that no accurate clinical history could be obtained. Unfortunately Lawson Tait published no history of his case. We must remember that when an ovarian cyst undergoes axial rotation in pregnancy and is pushed into the lumbar region its rate of growth is usually slackened, but it never remains stationary in size and harmless for several years. *Pain* and *tenderness* are variable symptoms. Local peritonitis, as Mayo Robson has shown, is, as a rule, absent in uncomplicated enlargements of the gall bladder. In Terrier's case alone was adhesive peritonitis marked, whilst in my own, though there was a total absence of any visible sign of peritonitis, the tumour was tender on pressure. This absence of peritonitis accounts for the absence of the dull, continuous pain frequent in cases of displaced ovarian cysts which nearly always set up local peritonitis. In the series of gall-bladder cysts here reviewed a distinct history of colic was not the rule.

In *shape* the dilated gall bladder is in its earlier stage

* Terrier's patient had passed dark green urine for two days during an attack of influenza six months before operation.

always pyriform. Later on, as in my own case, it tends to assume the form of a cucumber (Langenbuch). When the distension is extreme, the gall bladder is converted into a large oval cyst extending considerably to the left of the middle line. I have already spoken of the marked *mobility* which is the rule in these cases. We are not to forget that the lower pole of the cyst may be pushed below the level of the symphysis (Kocher) or into Douglas's pouch (author),* whilst Osler has described a case where a dilated gall bladder was found attached to the right broad ligament.[11] Had it been as large as some of the cysts here described, error in diagnosis would have been easy.

As regards *resonance* and *dullness*, we should remember Mayo Robson's words: "Percussion by no means always discovers dullness coextensive with the tumour, and is especially deceptive if the surrounding intestine be distended; dullness on percussion is therefore a very variable sign, palpation will

Fig. 1.—Cystic tumour of gall bladder (Author's case). Diagram indicating the area of hepatic dullness, the area of dullness over the left part of the front of the cyst, and the area of resonance over right part and between the cyst and the liver.

be found more trustworthy." My own case showed that intestine may slip into the groove between the edge of the liver and the gall bladder; resonance on percussion was so marked that I could not feel sure that the cyst was really a dilated gall bladder. Intestine may adhere to the front of an ovarian tumour fixed by adhesions in the right loin. In that case, however, the tumour simulates a cystic kidney rather than a gall bladder.

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* It has even been found engaged in the sac of a right femoral hernia (Waring).

Fluctuation is seldom indistinguishable in an ovarian cyst, but it was also quite distinct in the very big cystic gall bladders described by Lawson Tait, Terrier, and Gersuny, where the walls were thin; it could hardly have been absent in Tuffier's case. In Kocher's and my own the tumour was firm or tense. Mayo Robson teaches that the average cystic gall bladder is too tense to fluctuate. Much depends upon the thickness of the wall of the gall bladder, very variable for well-known reasons even in typical cases of cholelithiasis; and, turning to the present series, Kocher's and Tuffier's cysts showed an extreme difference in this respect.

I need not dwell on those essential features of gall-bladder cysts which are revealed by an exploratory operation, namely, the fluid and the presence of calculi. For when once the cyst is proved to be not ovarian, but the product of cholelithiasis, the question of diagnosis, the subject of this lecture, is closed. In conclusion, I may observe that the diagnosis of a large dropsical gall bladder from an ovarian cyst occupying the right side of the abdomen is seldom attended with much difficulty. The above recorded cases, however, show that a cystic gall bladder may to a certain extent simulate an ovarian cyst, and on that account I have discussed this class of abdominal tumour at some length.

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F. W. Collinson "A Case of a very large Gall Bladder successfully treated by Excision" B.M.J. May 29 1909, pp. 1294. Any case is quoted in full. (22 pints of bile & pus). Suspected to be carcinoma & incision was made in middle line below umbilicus